



Figure 3-6: Sewer Backflow Valve Installation
FEMA 384, 1999

In some flood-prone areas, flooding can cause sewage to back up into houses through drain pipes. This causes damage that is difficult to repair and creates health hazards. A good way to protect a house from sewage backup is to install backflow valves, which are designed to block drain pipes temporarily and prevent flow into the house (Figure 3-6). Backflow valves are available in a variety of designs that range from the simple to the complex. Some designs must be operated by hand, so the effectiveness will depend on the amount of warning of impending flooding. Among the simpler valves are a flap or check valve, which will open to allow flow out of the house but close when the flow reverses. These valves operate automatically but do not provide as strong a seal.

3.7.4 Flood Safety

The Riverside County Flood Control and Water Conservation District (2000) provides general flood safety information to help educate the public.

Floods can take several hours to days to develop:

- A **flood watch** means a flood is possible in your area.
- A **flood warning** means flooding is already occurring or will occur soon in your area. If it is raining a lot, or if you are in a mountainous area, it's a good idea to keep listening to local radio or TV stations (not stations far away from you). If you hear about a flash flood watch for your area, stay on high ground.
- If you hear a **flash flood warning**, climb to higher ground immediately. Leave your car, camping gear, or other belongings where they are. You may have only minutes to escape. Flash floods can also happen without warning. If you hear a rumbling sound, if animals are running away from where you are, or if you feel the ground shaking, climb to higher ground immediately.

After a flood, keep yourself and your family safe by following these important safety tips:

Do not walk through flowing water. Drowning is the number one cause of flood deaths. While most of these drownings occur during flash floods, a mere six inches of moving water can knock you off your feet. Use a pole or stick to make sure that the ground is still there if you must move through an area where the water is standing but not flowing.

Do not drive through a flooded area: More people drown in their cars than anywhere else. Don't drive around road barriers; the road or bridge may be washed out. Six inches of moving water can carry a small car away! But much bigger vehicles are also at risk.

Stay away from flood control facilities: Warn your children about the dangers of playing in or near flood control facilities such as drainage channels, storm drains, open drainage ditches, natural streams, gutters and inlets to drainage facilities.

Stay away from power lines and electrical wires: Electrocutation is also a major killer in floods. Electrical current can travel through water. Report downed power lines to your utility company or local emergency manager.

Turn off your electricity when you return home: Some appliances, such as television sets, can shock you even after they have been unplugged. Don't use appliances or motors that have gotten wet unless they have been taken apart, cleaned and dried.

Watch for animals, especially snakes: Small animals that have been flooded out of their homes may

seek shelter in yours. Use a pole or stick to poke and overturn items, to help scare away small animals.

Look before you step: After a flood, the ground and floors are covered with debris including broken bottles and nails. Floors and stairs that have been covered with mud can be very slippery.

Carbon monoxide exhaust kills: Only use a generator or other gasoline-powered machine outdoors. The same goes for camping stoves. Fumes from charcoal are especially deadly - never cook with charcoal in an enclosed area.

Think before you drink: After flooding, drinking water often becomes contaminated. Do not drink your tap water until you have been told it is safe to do so.

Clean everything that got wet: Flood waters have picked up sewage and chemicals from roads, farms, factories and storage buildings. Spoiled food and flooded cosmetics and medicines are health hazards. When in doubt, throw them out.

Take good care of yourself: Recovering from a flood is a big job. It is tough on both the body and the spirit. You and your family should expect to feel the disaster's effects for some time. Rest often and take good care of yourself and your loved ones.